

REMARKS

In the Office Action dated December 16, 2009, the Examiner rejects claims 1-3, 9 and 23 under 35 U.S.C. §102(b) and rejects claims 4-8 under 35 U.S.C. §103(a). The Examiner objects to claims 10-13 as being dependent upon a rejected base claim but indicates they are otherwise allowable. With this Amendment, Applicant amends claims 1-10, 12, 18, 19, 20 and 23. Claims 14-22 were previously withdrawn. Following entry of this Amendment, claims 1-23 remain pending in the Application. Applicant respectfully requests reconsideration of the Application as amended.

Response to objections

The title of the invention has been amended as the Examiner held the original title to be insufficiently descriptive. Applicant submits that the amended title - BATTERY MODULE AND DEVICE FOR BATTERY ASSEMBLY- is sufficiently descriptive.

Applicant thanks the Examiner for acknowledging the allowable claims. Applicant has amended claim 10 to independent form. Claim 12 is amended to clarify antecedent basis. Accordingly, claims 10-13 are now in condition for allowance. Withdrawn claim 20 has been amended to include the limitations of claim 10. Claims 21 and 22 depend from claim 20 to include all of the limitations therein. Accordingly, Applicants request rejoinder of claims 20-22 as they are in condition for allowance.

Response to rejections under 35 USC § 102(b)

The Examiner rejects claims 1-3 and 9 under 35 U.S.C. §102(b) as being anticipated by Descroix et al. (EP 0114667). Claim 1 (and claims 2, 3 and 9 by their dependency) as amended recites a battery module comprising a cell unit having a plurality of cells, a housing and a cover to store the cell unit, and a shaft member inserted into a through-hole provided in the cover and further through a through-hole provided in the cell unit and further through a through-hole provided in the housing. The shaft member comprises a length that allows protrusion beyond the housing. The claim has been amended to clarify the sequence of insertion and that the shaft member protrudes beyond the housing. Support for these amendments is found in FIGS. 3-5 and 10. Withdrawn claim 18 is amended to conform to the changes to claim 1 to preserve the right of rejoinder, and its dependent claim 19 is amended to conform to the changes to claim 9 as described hereinafter.

The Examiner contends that Descroix teaches each and every element of claim 1. However, Descroix does not disclose the shaft member protruding beyond the housing.

The Examiner reproduces FIG. 1 of Descroix on page 3 of the Office Action. As clearly shown in FIG. 1, the shaft member does not protrude beyond either the cover or the housing in Descroix. Furthermore, the shaft of Descroix is never inserted into a through-hole in the housing, or casing, as labeled by the Examiner. As shown in at least FIGS. 3, 4, 9A and 11A, the shaft member 70 extends beyond the outermost reach of the housing 22.

Accordingly, Descroix does not teach or suggest each and every element of claim 1 and so cannot anticipate claim 1. Accordingly, claim 1 and its dependent claims 2, 3 and 9 are allowable.

In addition, Descroix fails to teach or suggest the additional feature of claim 2 of a lock member provided at an area where the shaft member protrudes beyond the housing to lock the shaft member to the housing. Support for the amendments to claim 2 can be found in original claim 4. Descroix does not teach a lock member that extends from the shaft in an area where the shaft protrudes beyond the housing as the shaft of Descroix does not protrude beyond the housing. Furthermore, according to the Examiner's notation of FIG. 1 of Descroix in the Office Action, the "lock member" 29 locks the cover 28, not the housing. For these reasons, and based on its dependency from claim 1, claim 2 is allowable over the cited art.

In addition, Descroix fails to teach or suggest the addition feature of claim 9 wherein an edge of the housing is mutually locked into a rolled edge of the cover to form a seam between the housing and the cover. Support for the amendments to claim 9 is found in paragraph [0026] and at least FIGS. 4, 11A and 12-14. Descroix does not disclose a cover having a rolled edge. Nor does Descroix disclose an edge of the housing mutually locking into an edge of the cover. The Examiner shows on page 4 of the Office Action how he believes the cover forms a seam with the housing. However, the cover and housing do not form a seam as they do not touch. As seen of page 4 of the Office Action, positive tab 73 and negative tab 72 extend between and beyond the cover and housing. Therefore, the cover and housing cannot form a seam. For these reasons, and based on its dependency from claim 1, claim 2 is allowable over the cited art.

The Examiner rejects claim 23 under 35 U.S.C. §102(b) as being anticipated by Descroix et al. Claim 23 as amended recites a battery module comprising means for enclosing a plurality of cells and a shaft member inserted into a through-hole provided in the cells and a through-hole provided in the enclosing means, wherein the shaft member comprises a length that allows protrusion beyond the enclosing means, and the shaft member

comprises means for locking the shaft member to the means for enclosing the plurality of cells, the means for locking including a first position during insertion and a second position during locking. Support for the amendments can be found in FIGS. 3-5 and 10 and at least paragraph [0025]. As explained above, Descroix fails to teach or suggest a shaft member protruding beyond the housing and a shaft member having a locking member having two positions. Accordingly, claim 23 is allowable over Descroix.

Response to rejections under 35 USC § 103(a)

The Examiner rejects claims 4-6 and 8 under 35 U.S.C. §103(a) as being unpatentable over Descroix. Claims 4-6 and 8 depend from claim 1 to include all of the limitations therein. As explained above, Descroix fails to teach or suggest the shaft member extending beyond the housing. Descroix discloses a shaft that is hollow and opens sideways to distribute electrolyte. (Abstract). There is no suggestion or motivation to extend the shaft of Descroix beyond the housing so that it can be used as a jig for alignment of the battery module. Therefore, claim 4-6 and 8 are allowable over Descroix.

In addition, claim 5 further recites that the lock member has a structure that is free to move between a first position where insertion of the lock member into the through-hole of the cell unit and into the through-holes of the housing and the cover is allowed and a second position where separation of the cell units and the housing and the cover from the shaft member is prevented. Amendments to claim 5 are supported in the specification in at least FIGS. 7, 9A and 9B. Descroix does not disclose a lock member that is inserted with the shaft through the holes. As noted by the Examiner, Descroix discloses a nut that is removed from the shaft prior to insertion. For this reason, and based on its dependency from claim 1, claim 5 is allowable over the cited art.

In addition, claim 6 further recites that the shaft member doubles as a jig for insertion of the cover, the cell unit, and the housing in said order from the fastening member toward the lock at the time of assembly of the battery module. Support for the claim 6 amendments can be found in at least FIG. 10. Descroix discloses inserting the shaft through a bottom cover 27, the cell units, and a top cover 28. The shaft is never inserted through the housing, or case, as the Examiner labels it on page 3 of the Office Action. For this reason, and based on its dependency from claim 1, claim 5 is allowable over the cited art.

The Examiner rejects claim 7 under 35 U.S.C. §103(a) as being unpatentable over Descroix in view of Yamaguchi et al. (US 5,639,257). Claim 7 depends from claims 1

and 2 to include all of the limitations therein and to further recite that the lock member is free to move between a first position and a second position as the lock member undergoes elastic displacement in the direction of an axis of the shaft member. As explained above, Descroix does not disclose the limitations of claims 1 and 2, including a lock member that extends from the shaft in an area where the shaft protrudes beyond the housing. Therefore, Yamaguchi et al. would need to cure the deficiencies of Descroix for claims 1 and 2 before curing the deficiencies of claim 7. However, Yamaguchi et al. does not teach or suggest a lock member that extends from the shaft in an area where the shaft protrudes beyond the housing, as clearly seen in FIG. 3. The lock member 44 is within anything that could be described as a housing, rather than extending from it. Therefore, the cited combination fails to teach, suggest or render obvious the invention of claim 7. Applicant submits that claim 7 is allowable over the cited art.

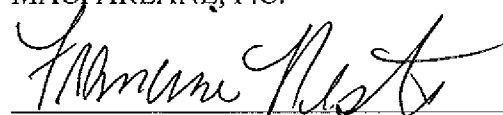
Conclusion

It is respectfully submitted that this Amendment traverses and overcomes all of the Examiner's rejections to the Application as originally filed. It is further submitted that this Amendment has antecedent basis in the Application as originally filed, including the specification, claims and drawings, and that this Amendment does not add any new subject matter to the Application. Reconsideration of the Application as amended is requested. It is respectfully submitted that this Amendment places the Application in suitable condition for allowance; notice of which is requested.

If the Examiner feels that prosecution of the present application can be expedited through a conference with Applicant, the Examiner is invited to contact the undersigned at the telephone number listed below.

Respectfully submitted,

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